



Explaining the Relationship between Psychotropic Medications and Weight Gain in a Correctional Setting

Madison L. Gates, PhD, Elizabeth Ferguson, MD, Thad Wilkins, MD, Veronica Walker, MSLS & Wonsuk Yoo, PhD

Obesity/Weight Gain & Corrections

- Clark & Waring, 2012
 - Women only
 - 2 weeks duration
- Herbert, Plugge, Foster & Doll, 2012
 - High & low income countries
- Houle, 2011; 2014
 - Men only
 - Cross-sectional (2011); growth modeling (2014)
- Gates & Bradford, 2015
 - Offenders in one jurisdiction
 - 6 year retrospective
- Antipsychotic & antidepressant agents and weight gain

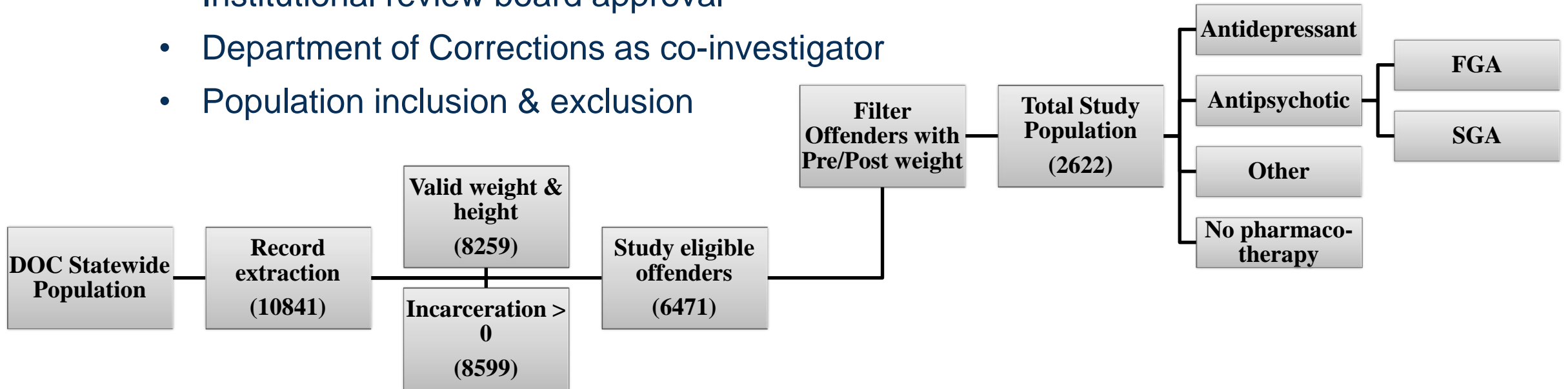


A Psychotropic Weight Gain Investigation

- **Primary aim** is to investigate the effect that psychotropic agents have on changes in weight during incarceration.
- Hypotheses:
 1. Patients prescribed antidepressants and antipsychotics (first or second generation) gain more weight during their incarceration compared to offenders taking other or no pharmacotherapy.
 2. African American offenders taking antidepressants and/or antipsychotics gain more weight than Whites who are prescribed similar agents.
 3. Women offenders taking antidepressants and/or antipsychotics gain more weight than men who are prescribed similar agents.

Methods

- Institutional review board approval
- Department of Corrections as co-investigator
- Population inclusion & exclusion



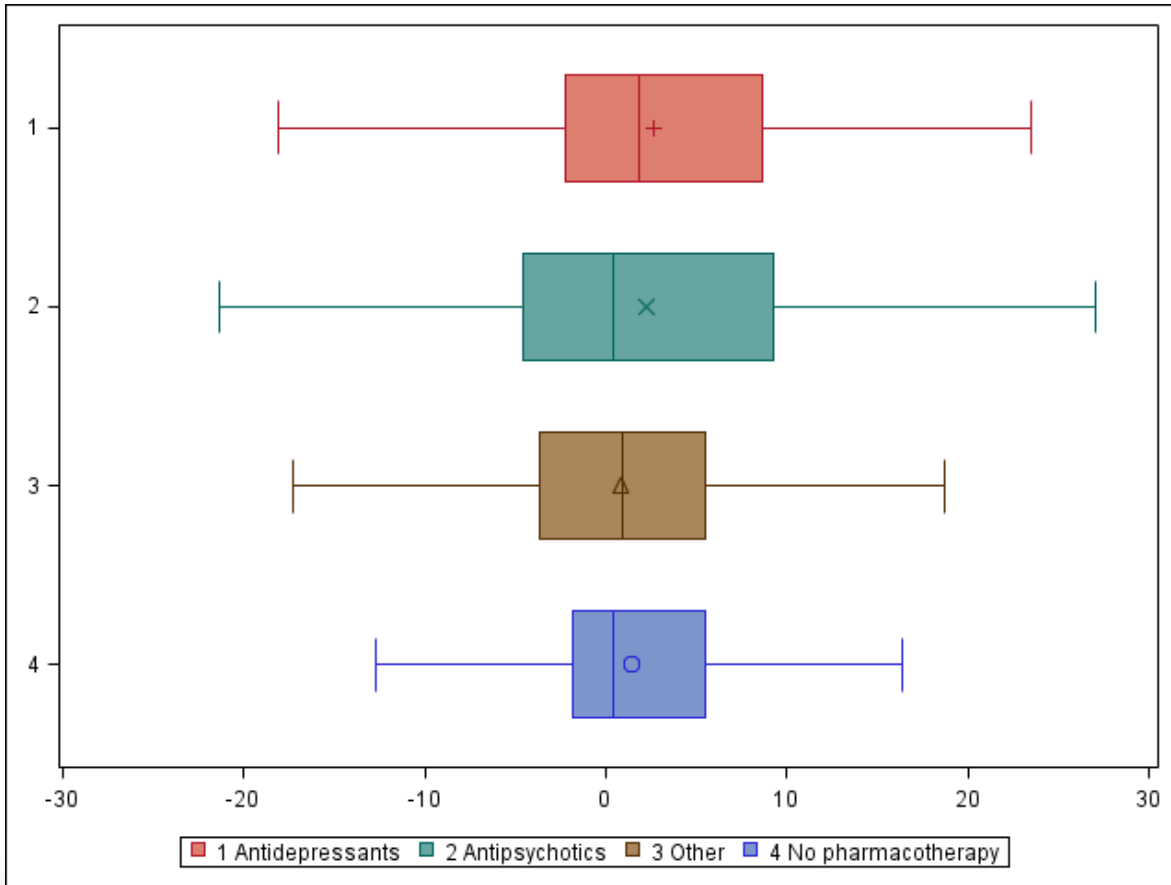
- Data collection: weight, height, medication, length of incarceration and demographics
- Analyses: group comparisons (e.g., Wilcoxon signed-rank test and Kruskal–Wallis test)

Results

	Variable	Study	Total	<i>p</i>
		n (%) or Mean ± SD	n (%) or Mean ± SD	
Race*	African American	897 (34.2)	3,192 (29.4)	< .001
	White	1,657 (63.2)	7,175 (66.2)	.004
Gender	Men	2,458 (93.8)	9,767 (90.1)	< .001
	Women	164 (6.3)	1074 (9.9)	< .001
	Age	40.20 ± 10.3	37.5 ± 11.5	< .001
Medications	Psychotropic	390 (14.9)	1,446 (13.3)	.040
	Other medication	823 (31.4)	4,487 (41.4)	< .001
	No medication	1,409 (53.7)	6,136 (56.6)	.007

* Distribution of Asians, Hispanics and American Indians were excluded from our analyses due to insufficient data.

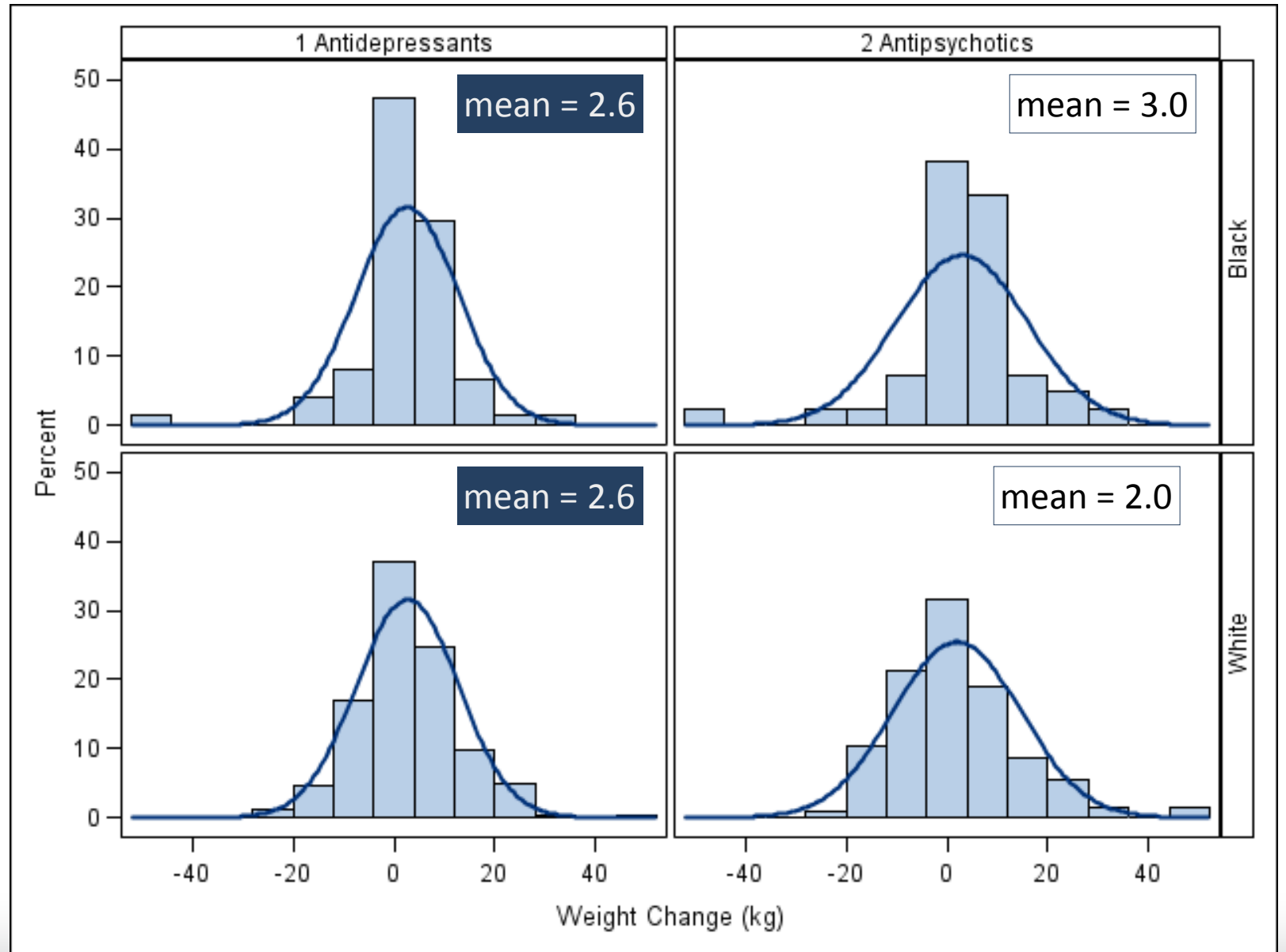
Weight Gain



	n	mean (kg)	SD	95% CI	
Antidepressants	324	2.7	10.1	1.6	3.8
Antipsychotics	172	2.3	12.6	0.4	4.2
Other	823	0.8	9.6	0.1	1.5
No pharmacotherapy	1409	1.4	8.1	1.0	1.8
$p < .01$					

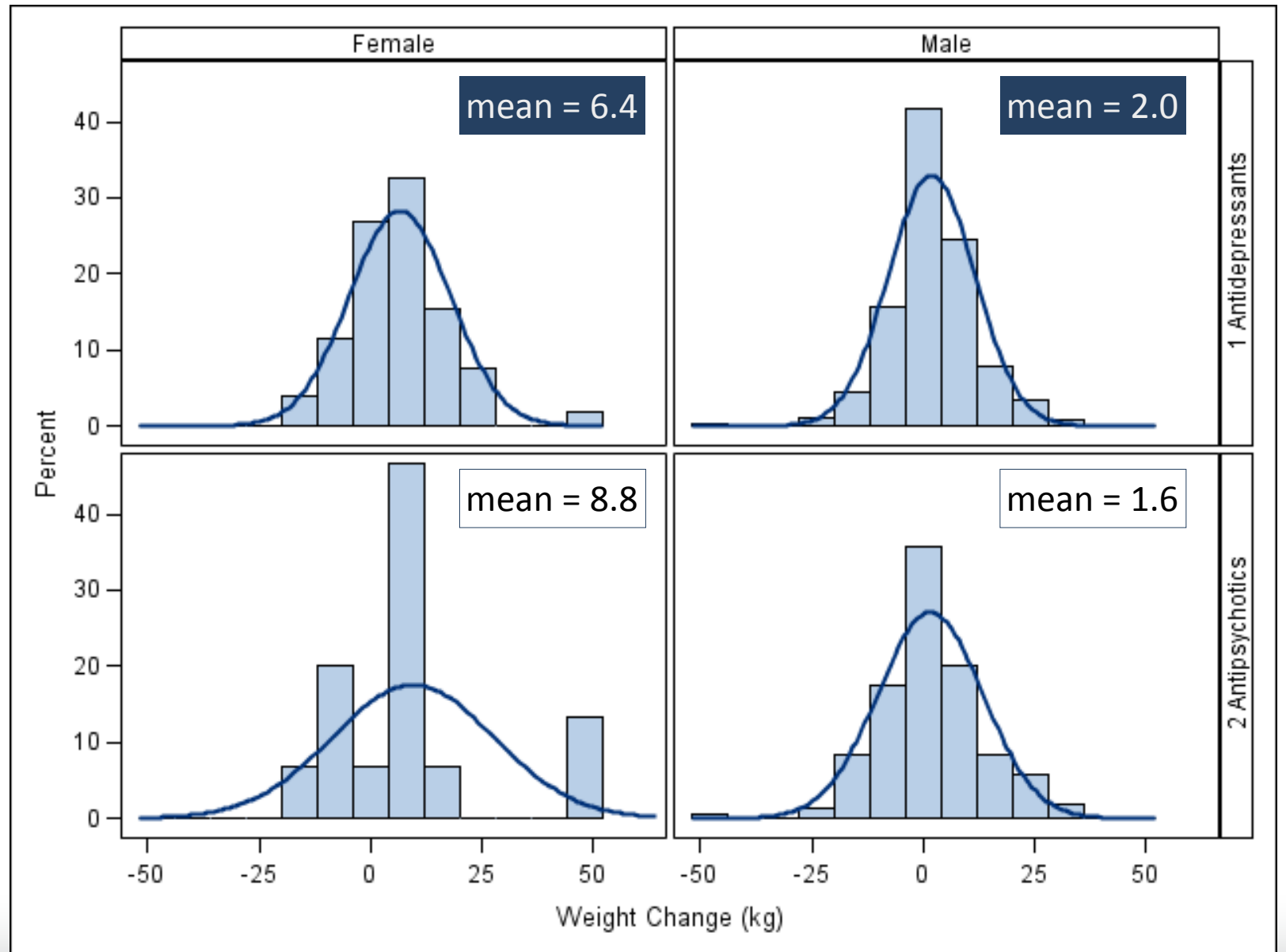
Race

- No significant difference

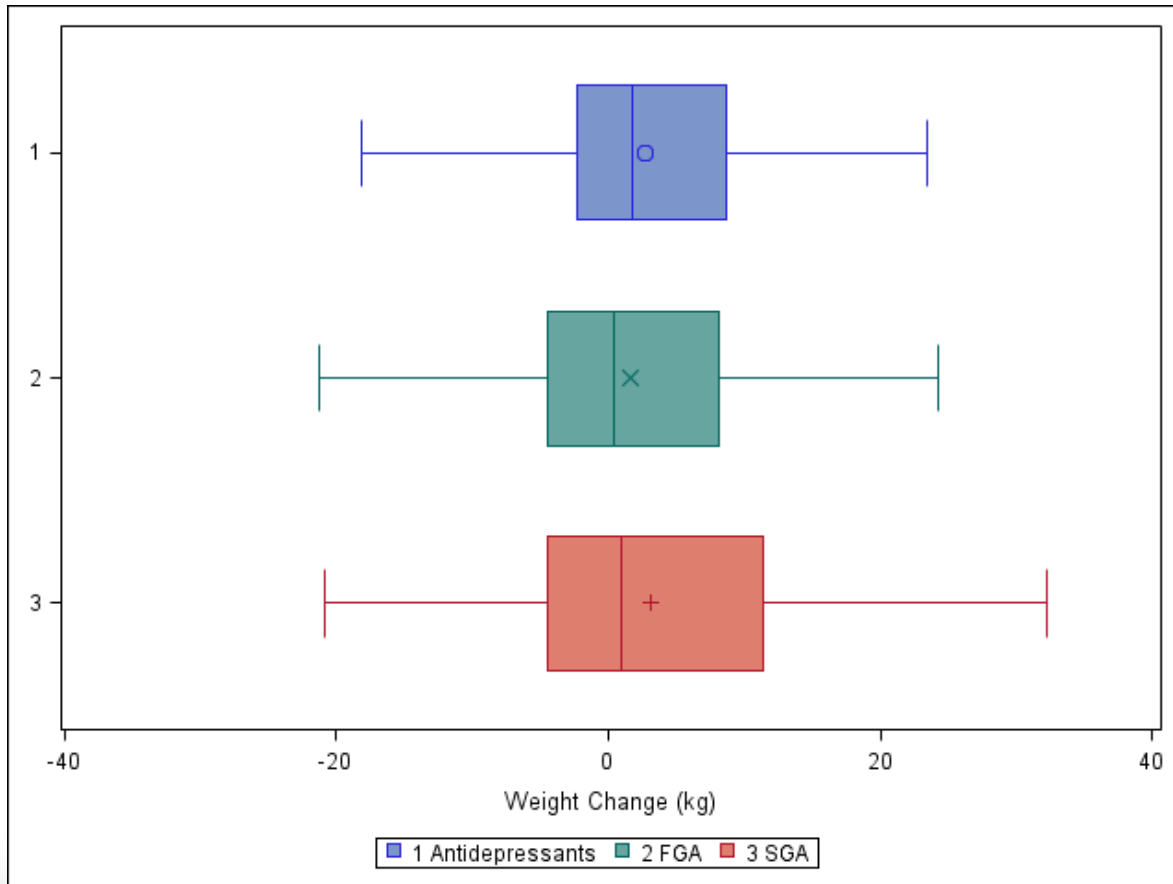


Gender

- Antidepressants ($p < .01$)
- Antipsychotics ($p < .01$)



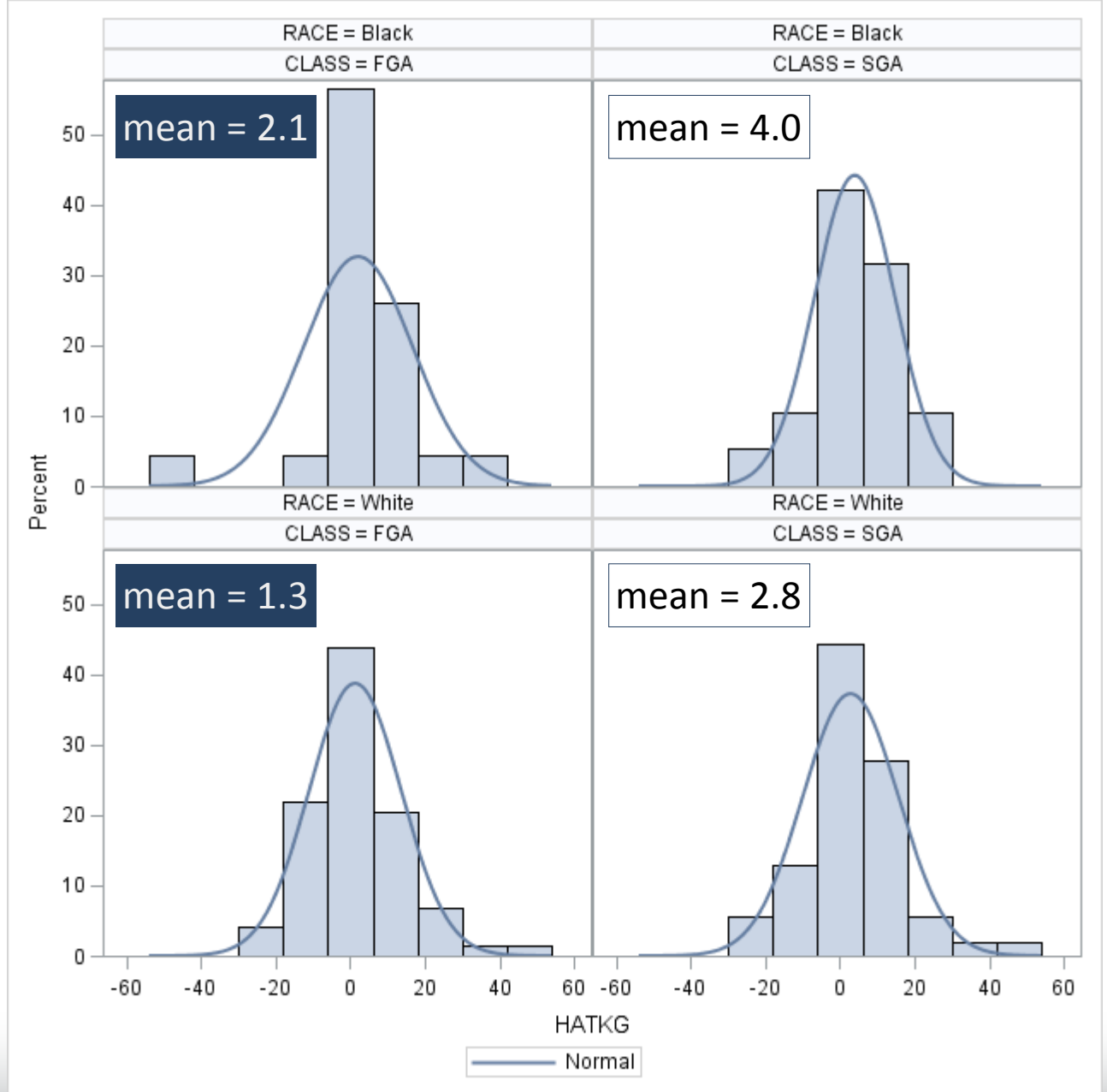
Antipsychotics



	n	mean	SD	95% CI	
Antidepressants	324	2.7	10.1	1.6	3.8
Antipsychotics					
FGA	99	1.6	12.8	-0.9	4.2
SGA	73	3.1	12.3	0.3	6.0
$p < .48$					

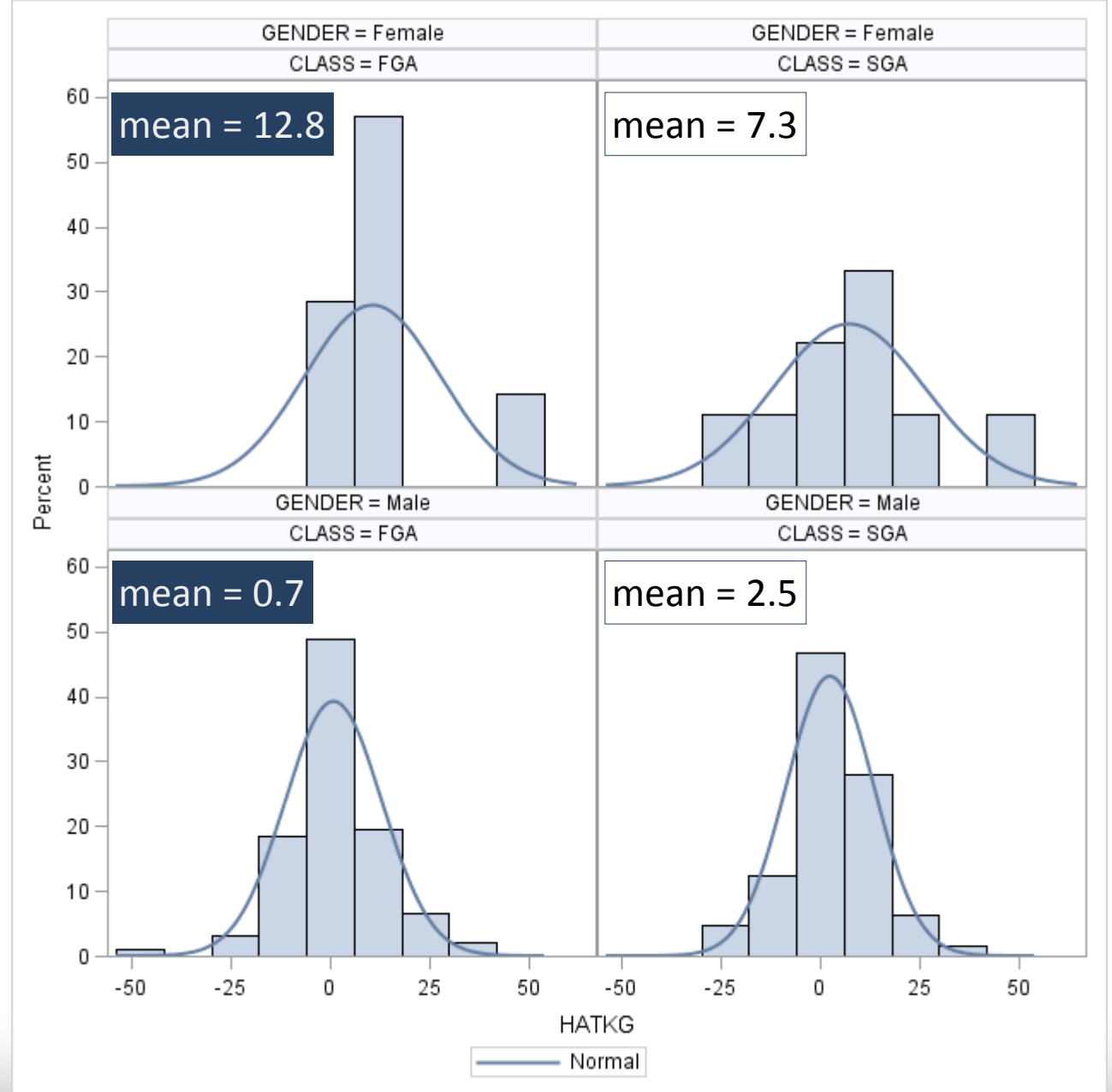
Antipsychotics & Race

- No significant difference



Antipsychotic & Gender

- FGA ($p < .05$)
- SGA (not significant)



Discussion

- Offenders prescribed antipsychotic agents gained weight.
 - AIWG not significant compared to patients on other pharmacotherapies
- No significant differences in weight gain between FGA and SGA
 - Men on SGA gained more weight compared to FGA.
 - Women on FGA gained more weight compared to SGA.
- Significant gender differences for antidepressants
- No significant differences between African Americans and Whites – antidepressants and antipsychotics
- No relationship between age/length of incarceration and weight gain or obesity



Conclusion

- Mental health treatment is complex.
- FGA (greater extrapyramidal) and SGA (greater weight gain) both have side effects, debate ongoing.
- Gender disparities regarding weight gain is consistent with other studies.
 - Greater weight gain on FGA compared to SGA among women is not consistent with literature.
- Psychotropic agents not fully explanatory for disparities in weight gain
- Further investigations warranted



Limitations

- Incomplete medication history (e.g., medication switching, adherence)
- Lacked complete data to evaluate metabolic syndrome
- Missing data for women not proportionated to men
- Did not investigate potential moderating effects

Acknowledgement

We thank the Institute of Public and Preventive Health at Augusta University for providing support, time and resources to conduct this study.

Questions, Comments & Collaborations

